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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,150	09/14/2000	Shigeaki Tochimoto	54024-022	9616

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EXAMINER

DEL SOLE, JOSEPH S

ART UNIT	PAPER NUMBER
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1722

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DATE MAILED: 09/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,150

Applicant(s)

TOCHIMOTO ET AL.

Examiner

Joseph S. Del Sole

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 25 and 28-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 . 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 25 and 28-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method, there being no allowable generic or linking claim. Election was made without the indication of traverse in Paper No. 5.

Specification

2. The abstract of the disclosure is objected to because a) in line 2 of the abstract "colored in Y, M, C," should be changed to --colored in Yellow, Magenta, Cyan--. Correction is required. See MPEP § 608.01(b).

Claim Objections

3. Claims 2-11, 13 and 15-22 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. These claims only recite the materials being jetted by the nozzles or head, the properties of these materials or the method of applying and do not limit the apparatus structurally. Inclusion of the material worked upon by a structure being claimed does not impart patentability to the claims, In re Otto et al., 136 USPQ 458. Intended use has been continuously held not to be germane to determining the patentability of the apparatus, In re Finsterwalder, 168 USPQ 530. Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim, Ex parte Thibault, 164 USPQ 666. A recitation with respect to the manner in which a claimed apparatus is

intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitation of that claimed, Ex parte Masham, 2 USPQ 2d 1647. The manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself, In re Casey, 152 USPQ 235. See also MPEP 2114 wherein it states that the apparatus must be distinguished from the prior art in terms of structure rather than function. Nozzles and heads are structures, they only differ in the function of their use if they are used to process materials having different colors.

4. Claims 10- 13 are objected to because of the following informalities: **a)** in claim 10, line 1 "region is include a" is grammatically incorrect and should be corrected; **b)** in claim 11, line 2 "which appears on surface of" is grammatically incorrect and should be corrected; **c)** in claim 12, line 4 "detecting amount of rest of said plurality of binders" is grammatically incorrect and should be corrected; **d)** in claim 12, lines 6-7 "which is remaining comparatively more in one of said plurality of tanks is applied" is grammatically unclear and should be corrected; **e)** in claim 13, lines 2-3 "binders which give different senses of mass" is grammatically incorrect and should be corrected.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-11, 13, 14-22 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Cima et al (5,387,380).

Cima et al teach an apparatus for forming a three-dimensional product, the apparatus having a layer forming mechanism for forming a layer of material (Fig 1, #13 or Fig2A, #41); an applying head (Fig 1, #15 or Fig 2B, #43 and #43A) for applying plural kinds of materials to the layer; a controller for controlling the applying head to apply materials selectively to a predetermined region on the layer (col 3, lines 2-14 and col 4, lines 12-28); the applying head is capable of applying one material after another material (col 12, lines 3-10); the applying head can apply binder and ink; the applying head comprises a plurality of nozzles which jet a plurality of binders (col 4, lines 12-13); and a heater for heating a three-dimensional product formed by the layer forming mechanism and the applying head (col 4, lines 44-55, col 9, lines 2-6, col 11, lines 8-14).

Regarding the use of one material that becomes stable faster than another material after the another material is applied to the layer, this amounts to an intended use of the apparatus and has no patentable weight. Intended use has been continuously held not to be germane to determining the patentability of the apparatus, In re Finsterwalder, 168 USPQ 530. Purpose to which apparatus is to be put and expression relating apparatus to contents thereof during intended operation are not significant in determining patentability of an apparatus claim, Ex parte Thibault, 164 USPQ 666. Inclusion of the material worked upon by a structure being claimed does not impart patentability to the claims, In re Otto et al., 136 USPQ 458.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cima et al (5,387,380) in view of Haas et al (3,663,137).

Cima et al teach the apparatus as discussed above.

Cima et al fail to teach a plurality of tanks for containing materials and supplying materials to an applying head; detectors for detecting the remaining amount of material in the tanks and applying to a region a material that has comparatively more remaining in the tank.

Haas et al teach a plurality of tanks (Fig 1, #14a-#14e) for containing materials and supplying the materials to an applying head (Fig 1, #16); and detectors (Fig 1, #14

the tanks are scales that measure weight) for the purpose of detecting the amount of material in the tanks and controlling the amount of material applied to the mold (col 4, line 54 - col 5, line 50).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified Cima et al with a plurality of tanks that supply materials to the applying head, the tanks being detectors having scales that measure the weight of the material in the tanks as taught by Haas et al because it controls the amount of material applied to the mold.

Regarding applying a material which remains comparatively more in one of the tanks and applying material from this tank to a particular region, as stated in claim 12, this limitation is a process limitation, and process limitations have no patentable weight in an apparatus claim. Intended use has been continuously held not to be germane to determining the patentability of the apparatus, *In re Finsterwalder*, 168 USPQ 530. A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitation of that claimed, *Ex parte Masham*, 2 USPQ 2d 1647. The manner or method in which a machine is to be utilized is not germane to the issue of patentability of the machine itself, *In re Casey*, 152 USPQ 235.

10. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cima et al (5,387,380) in view of Japanese Patent 10-207194.

Cima et al teach the apparatus as discussed above.

Cima et al fail to teach the heater being a lamp for applying light to the product.

Japanese Patent 10-207194 teaches building a three dimensional object and applying heat to the object using a heating lamp that applies light for the purpose of bonding the materials to form each layer (pages 2-3, paragraph [0048]).

It would have been obvious to one having ordinary skill in the art at the time of the Applicant's invention to have modified the invention of Cima et al with the heater of Cima et al being a lamp applying light as taught by Japanese Patent 10-207194 because it enables the apparatus to bond the materials to form each layer and subsequently form a three dimensional product in a cheap and easily controlled manner.

References of Interest

11. Speakman (6,164,850) is cited of interest to show the state of the art, particularly a single applying head with multiple nozzles.

Allowable Subject Matter

12. Claims 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach or suggest the powder supplier for forming left- and right-side heaps and left- and right-side spreading members wherein the right-side powder spreading member spreads the left-side heap to the right direction and the left-side powder spreading member spreads the right-side heap to the left direction.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph S. Del Sole whose telephone number is (703)

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308-6295. The examiner can normally be reached on Monday through Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jan Silbaugh, can be reached at (703) 308-3829. The official fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 for non-after finals and (703) 872-9311 for after finals.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Joseph B. Del Sol
J.S.D.

September 3, 2002

Jan H. Silbaugh

JAN H. SILBAUGH
SUPERVISORY PATENT EXAMINER
ART UNIT ~~17~~1722

9/4/02